REMARKS/ARGUMENTS

These remarks are made in response to the final Office Action of August 3, 2007 (hereinafter Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due. The Office, however, is expressly authorized to charge any deficiencies or credit any overpayments to Deposit Account 50-0951.

In the Office Action, Claims 19-21, 24-26, 28-31, 34-36, and 38 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,421,672 to McAllister, *et al.* (hereinafter McAllister). Claims 22, 23, 27, 32, 33, and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McAllister in view of U.S. Patent 6,256,630 to Gilai, *et al.* (hereinafter Gilai).

Although Applicants respectfully disagree with the rejections, Applicants nevertheless have amended certain claims and cancelled certain other claims so as to expedite prosecution of the present application by emphasizing certain aspects of the invention. Applicants respectfully note, however, that neither the amendments nor cancellation of claims are intended as, and should not be interpreted as, the surrender of any subject matter. Accordingly, Applicants respectfully reserve the right to present the original version of any of the amended claims in any future divisional or continuation applications from the present application.

In particular, Applicants have amended independent Claims 19, 24, 29, and 34 have been amended to further emphasize certain aspects of the invention. Applicants also have amended dependent Claims 22, 27, 32, and 37 so as to maintain consistency among the claims. Applicants have cancelled dependent Claims 21, 26, 31, and 36. The claim amendments, as discussed herein, are fully supported throughout the Specification. No new matter has been introduced by virtue of any of the claim amendments presented.

Certain Aspects Of Applicants' Invention

It may be useful at this juncture to reiterate certain aspects of Applicants' invention. In one embodiment of the invention, exemplified by Claim 1, a method of disambiguating database search results includes retrieving multiple database entries in response to a database search. Each of the retrieved database entries can include a plurality of common data fields, and the data items in each of the data fields of the retrieved database entries can be processed according to predetermined disambiguation criteria.

The method further can include identifying, based upon the afore-mentioned processing, from among the plurality of common data fields at least one disambiguation data field that satisfies the predetermined disambiguation criteria. Additionally, the method can include excluding data fields that have data items that are not able to be accurately pronounced using a particular speech interface. (See, e.g., Specification, p. 6, lines 11-24.)

The method also can include selecting one disambiguation data field based on a predetermined selection criterion when more than one disambiguation data field is identified in the identifying step. The selected data field will be one that has not been excluded because of a determination that the speech interface can not accurately pronounce data items contained in the selected data field. The method further can include presenting, through the speech interface, data items corresponding to the selected disambiguation data field for each the retrieved database entry.

The speech interface can be used in conjunction with a system in which the database search is performed, and the speech interface can provide system users with an interface for searching for information contained within a database in which the database search was conducted. The interface, moreover, can be configured for audibly receiving results of the database search.

The Claims Define Over The Cited References

As noted above, independent Claims 19, 24, 29, and 34 were each rejected as being anticipated by McAllister. McAllister is directed to a "telephone director system" that has the capability to disambiguate "entries with the same or similar primary keys." (McAllister, Abstract; and Col. 2, lines 27-29.)

McAllister excludes data items, not data fields, based on pronunciation

Applicants respectfully submit, however, that McAllister fails to teach, either expressly or inherently, every feature recited in Claims 19, 24, 29, and 34. For example, McAllister fails to teach excluding data *fields* having data items that can not be accurately pronounced using a speech interface, as recited in each of the claims.

In a portion of the reference cited at page 4 of the Office Action, McAllister describes the elimination of "unlikely pronunciations." As the express language of the reference reveals, however, McAllister does not exclude any data *fields*, but rather only those data field entries – that is, data *items* contained in a data field – which have an "unlikely" pronunciation:

> "The system may further consider and eliminate unlikely pronunciations. For example, while the name spelled 'K-O-C-H' may be a potential candidate listing for the spoken name 'Cook,' the converse is unlikely, i.e., a name pronounced "Koch" would not be spelled 'C-O-O-K.' As another feature of the invention, the system may additionally resolve ambiguities based on spelling, providing the spelling of a name to the caller or asking the caller to spell the name of the party being called, the method chosen possibly being dependent on the number of candidate listings identified." (Col. 4, lines 23-32.) (Emphasis supplied.)

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As the quoted language makes explicit, <u>McAllister does not exclude a data *field* that includes names, but rather only certain names that are entries (i.e., data items) in the name data field</u>. In the example offered by McAllister, the name KOCH would not be excluded, but the name COOK would be. Thus, some names are eliminated, while others are not, but the data field that contains the names is not excluded. Indeed, in no event does McAllister exclude a data field. <u>The entire data field can not be excluded by McAllister since not all names contained in the name data field of the different entries are excluded, only certain names are excluded, as described in the example.</u>

McAllister, therefore, is fundamentally different from Applicants' invention. With Applicants' invention, <u>if for any single database entry has a particular data field that stores a data item that can not be pronounced with a speech interface, then that data *field* for *all* entries is excluded from consideration for selection</u>. Compare how Applicants' invention operates as opposed to McAllister's system. As already noted <u>in McAllister's example, the system excludes COOK, but not KOCH. With Applicants' invention, however, if COOK could not be pronounced by a speech interface, and accordingly, were excluded from consideration, then so would KOCH because with Applicants' invention the entire data field of names would be excluded since even one data item from that field could not be pronounced by the speech interface.</u>

Thus, McAllister excludes individual data items, but not an entire data field. With Applicants' invention, if one entry has one unpronouncible data item in a data field, then all data items for that particular field are excluded. As described in the Specification, with Applicants' invention, if one name (i.e., data item) were unpronouncible by a speech interface, then the NAME data field would be excluded entirely from consideration; Applicants would, for example, look to the PHONE data field or the DEPT. NUMBER data field in lieu of the NAME data field for resolving an ambiguity. (See Specification, p. 6, lines 5-8; see also Figure 1.)

McAllister compares spellings and pronunciations, but does not determine

whether or not a data item can be pronounced by a speech interface

An additional distinction between McAllister and Applicants' invention is that McAllister nowhere excludes a name based on whether or not a speech interface can pronounce the name. Nothing in McAllister's example suggests that COOK is excluded because it can not be pronounced by a speech interface any less readily than can the name KOCH. Indeed, in the context of excluding some names but not others, McAllister does not even allude to a speech interface. Rather, McAllister excludes COOK, but not KOCH, because the *spelling* of the former could not possibly correspond to the pronunciation K-O-C-H. This, too, is fundamentally different from Applicants' invention. Applicants' invention determines whether or not a particular data item can be pronounced using a particular *speech interface*. McAllister's determination is language-based (spelling and pronunciation), whereas Applicants' determination is based on the technical capabilities of a particular speech interface.

Accordingly, McAllister fails to teach, expressly or inherently, every feature recited in independent Claims 19, 24, 29, and 34. Applicants respectfully submit, therefore, that Claims 19, 24, 29, and 34 define over the prior art. Applicants further respectfully submit that, whereas each of the remaining claims depends from Claim 19, 24, 29, and 34 while reciting additional features, all of the dependent claims likewise define over the prior art.

Dependent Claims 22, 27, 32, and 37

Moreover, with respect to dependent Claims 22, 27, 32, and 38 particularly, it is noted at page 5 of the Office Action that McAllister fails to disclose excluding data fields having data items that exceed a predetermined length. It is stated, however, that this feature is found in Gilai. In portions of the text cited in the Office Action, Gilai describes

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computer-implemented methods of matching a stored database entry to a character string supplied by a user:

> "Database lookup unit 90 generates and continually updates, as the call or database access session progresses, a similarity vector 92. <u>The similarity vector 92 has a number of vector components which correspond to the number of database entries</u>. Each similarity vector component stores a similarity score of the corresponding database entry. This similarity score is provided by the dictionary lookup 50 for each user-supplied word as the database access session proceeds. The database lookup 90 accumulates these similarity scores in the appropriate locations within the similarity vector.

> "After each word is supplied by the user, and the similarity vector is updated by the database lookup 90, or concurrently with the updating process, a candidate sorter 100 extracts a predetermined number of the highest scoring similarity vector components and stores these components in a best candidates box 94. The similarity vector 92 and best candidates box 94 are preferably stored in computer memory and are initialized at the beginning of each database access session." (Gilai, Col. 7, lines 44-63) (Emphasis supplied.)

Gilai looks at the number *of objects, not the* length *of an object*

Applicants firstly note that in Gilai the objects measured are vectors, wherein the vector components "correspond to the *number* of database *entries*." (Gilai, Col. 7, lines 44-63) (Emphasis supplied.) That is, Gilai looks to number of objects stored. In stark contrast, Applicants' invention measures each item's length (i.e., the length of a data item). Thus, whereas Gilai looks at the *number* of objects stored, Applicants' invention

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looks at the *length* of the individual objects. The two measurements are as different as the number of elements in a set of objects is from the length of an object drawn from that set.

Gilai nowhere even contemplates a method that utilizes a user's recall ability

More fundamentally, Gilai is performing a computer-implemented matching against entries in a database. Gilai, however, discloses nothing about the relative ease with which a *user recalls audibly presented speech*, as recited in Claims 22, 27, 32, and 38. Gilai's vectors measure nothing about a user's recall ability. Gilai's approach is purely mathematical and is implemented with a machine. Applicants' approach is grounded in the empirically determined ability of user's to recall speech elements presented to them and is based explicitly on performing an empirical analysis. Applicants' invention attempts to resolve an ambiguity by presenting speech elements that a user can readily recall, which is not a machine-implemented function. Gilai neither teaches nor suggests any of these aspects.

In another portion of the reference, Gilai similarly describes a machine-implemented technique for probabilistically determining a match so to identify stored data items to present to a user:

"The conversation manager 80 receives the output of unit 90 or 100 and determines a course of action. The considerations of the conversation manager may, for example, include the following:

a. If one database entry has a similarity score which significantly exceeds the similarity score of all other candidates and which exceeds a threshold similarity score, this entry may be deemed correct and therefore is presented to the user for confirmation.

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b. Typically, each entry in database 70 comprises a plurality of words or strings. For example, each entry in a zipcode directory typically includes some or all of the following words: state name, street name, street type, house number, locality. If this is the case, and processing of one string (such as "locality") does not provide a conclusive indication of the correct database entry, the conversation manager may decide to prompt the user to enter information identifying another word within the desired database entry (such as "street name").

c. If a small number of entries have similar or identical scores, the conversation manager may decide to present all of these to the user and prompt the user to select one of them about which s/he wishes to receive more information. (Gilai, Col. 11, line 62 – Col. 12, line 16.)

Gilai utilizes the similarity score to perform the probability-based machine matching This, however, teaches nothing about excluding data fields having data items that exceed a predetermined maximum length. None of the determinations made by Gilai have anything to do with a maximum length, determined from empirical analysis of the relative ease with which users recall audibly presented speech items, as recited in Claims 22, 27, 32, and 38. Whereas Applicants' invention determines which speech items are most readily recalled by a user, Gilai only performs a probabilistic matching of items in a database to user supplied input.

Accordingly, Gilai, even when combined with McAllister, fails to teach or suggest the features recited in Claims 22, 27, 32, and 38. Applicants respectfully submit, therefore, that these claims define over the prior art.

CONCLUSION

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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